

Figure 1

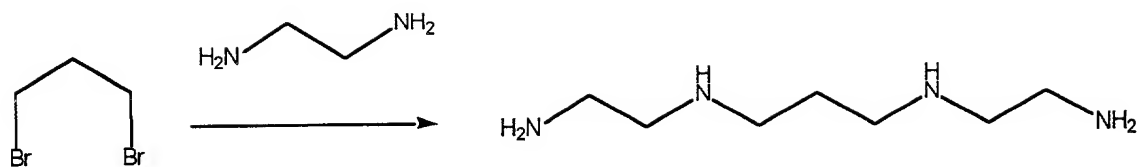


Figure 2

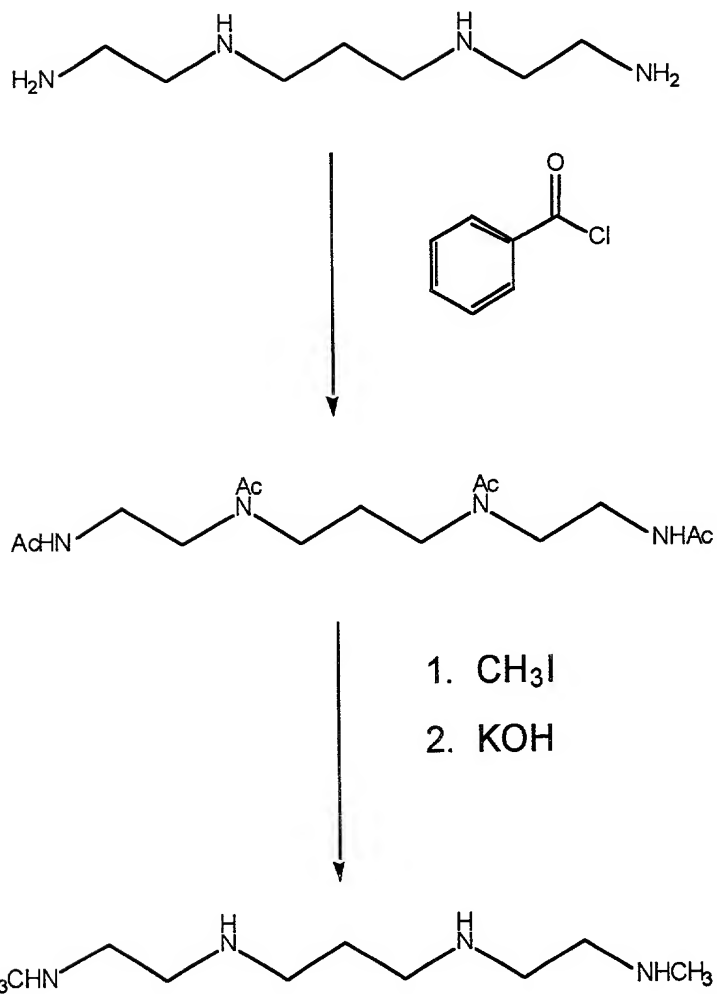


Figure 3

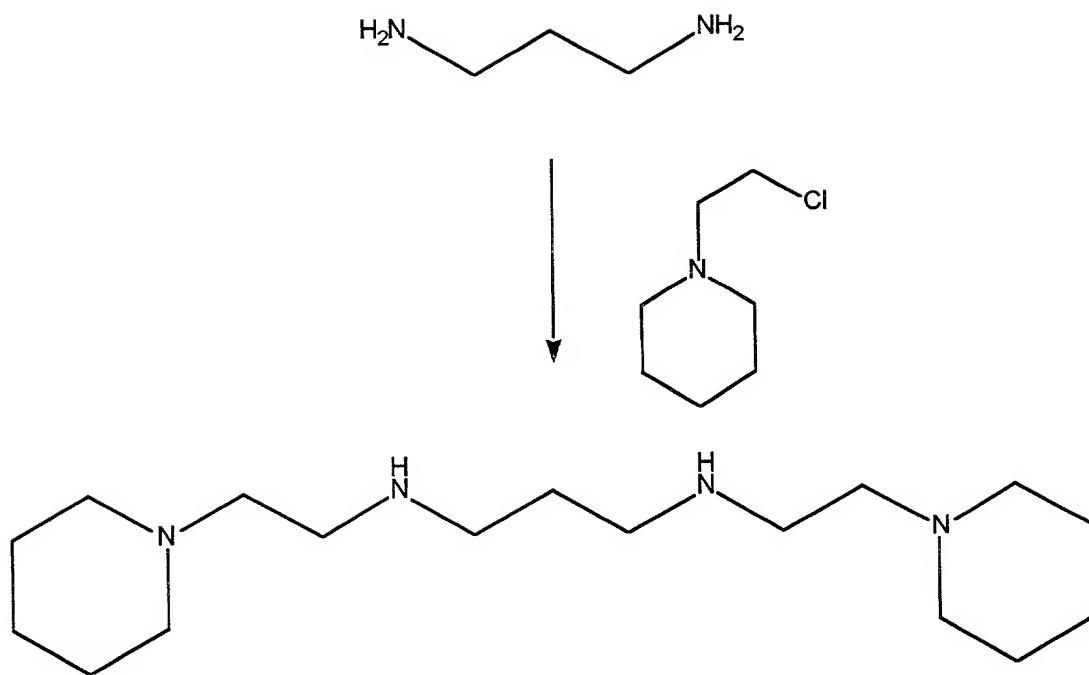


Figure 4

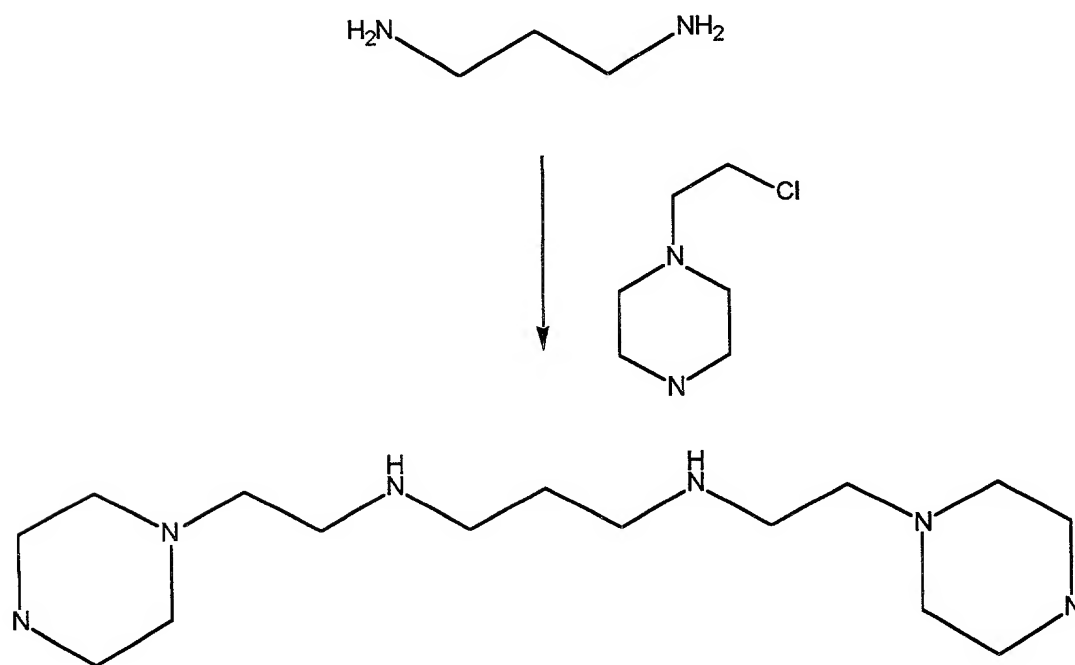


Figure 5

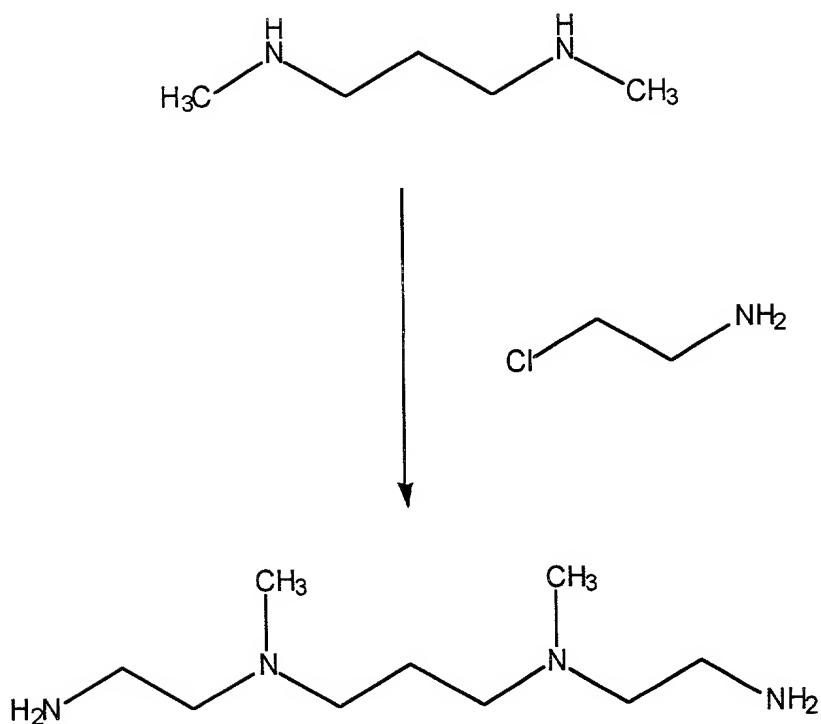


Figure 6

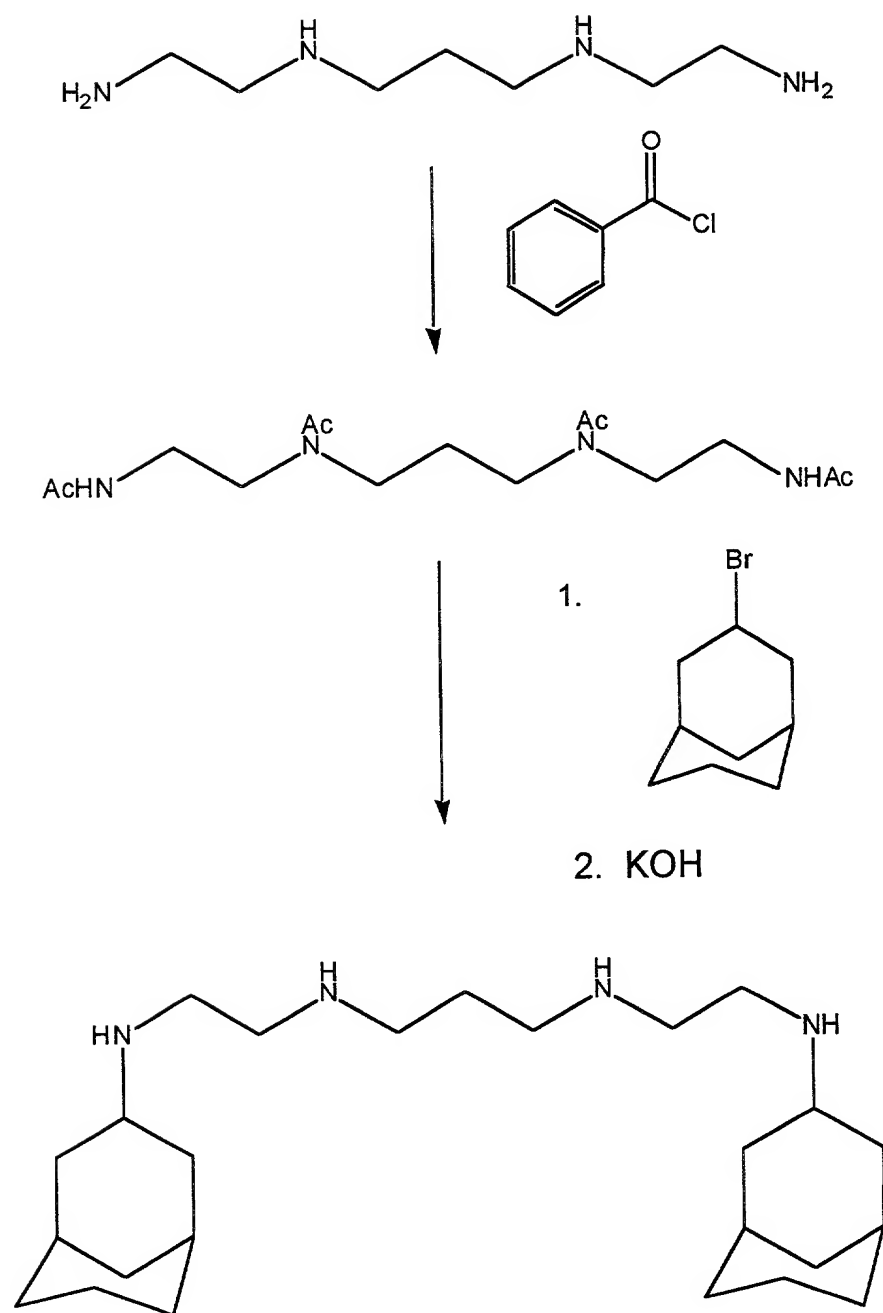


Figure 7

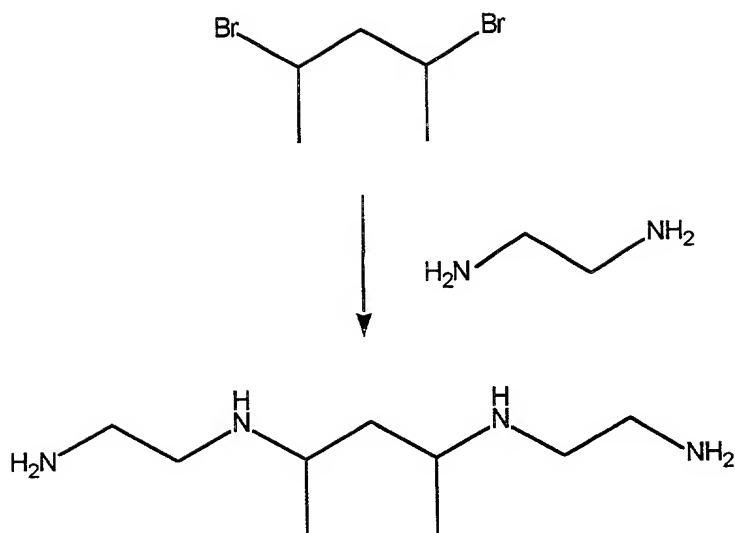


Figure 8

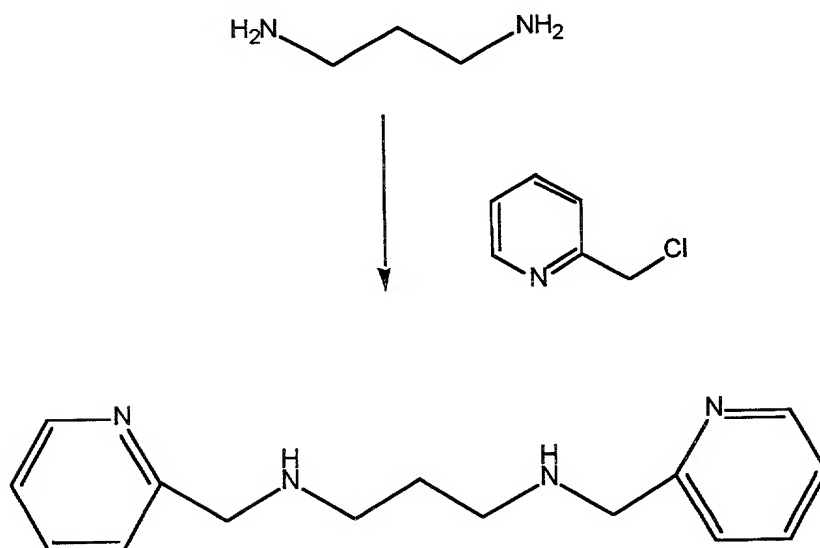


Figure 9

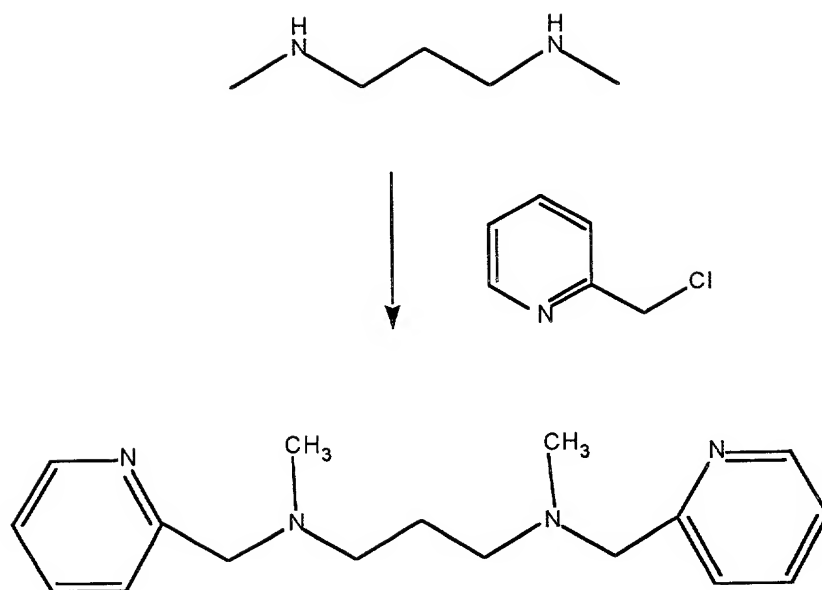


Figure 10

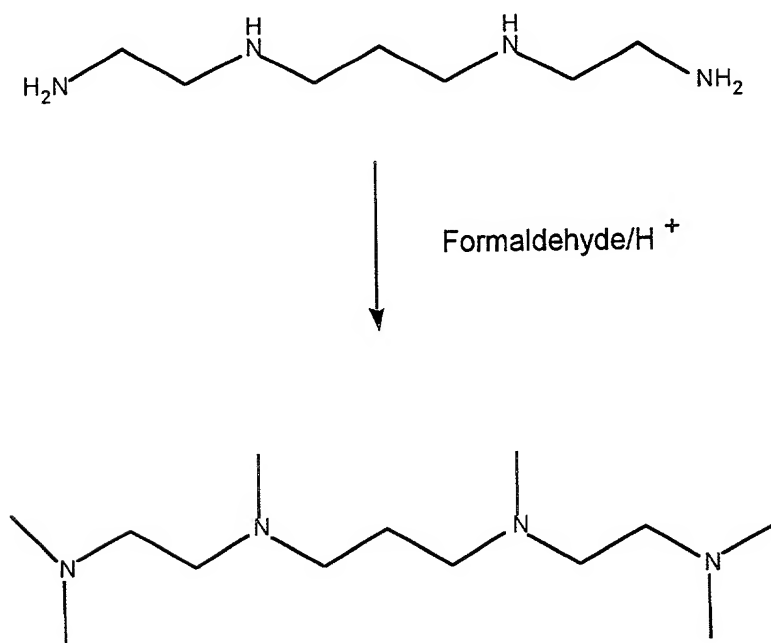


Figure 11

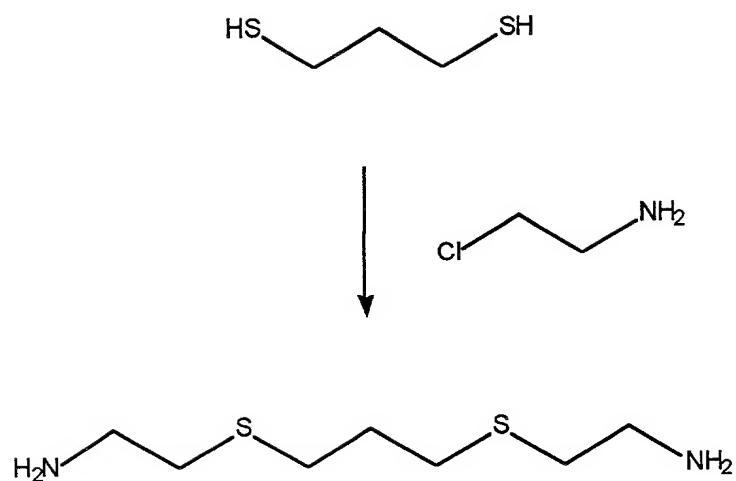
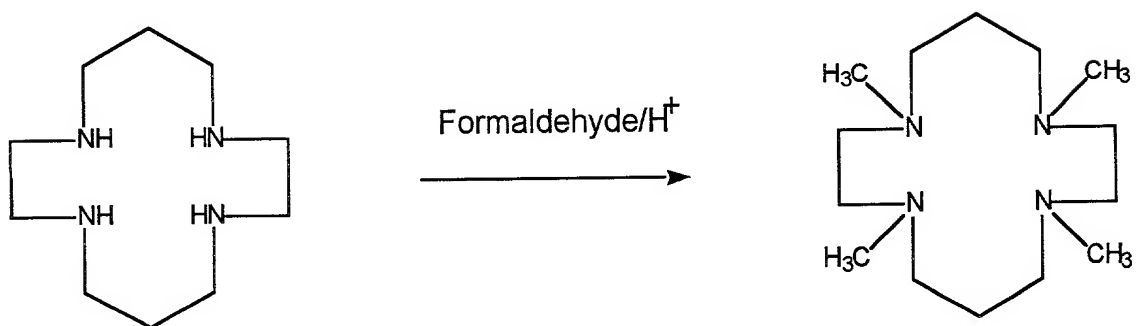


Figure 12



The reaction scheme illustrates the synthesis of a macrocyclic ligand. The starting material is a cyclic diamine, specifically 1,3-bis(2-aminopropyl)benzene, which is a benzene ring with two propyl chains at the 1 and 3 positions, each ending in a primary amine group (NH₂). This reacts with a bromoalkyl piperidine derivative, which consists of a six-membered piperidine ring with a 2-bromoethyl group attached to the nitrogen atom. The reaction is indicated by a downward-pointing arrow. The product is a macrocyclic ligand, which is a large ring structure formed by the reaction of the two starting materials. It features a central benzene ring with four propyl chains extending from it, each terminating in a nitrogen atom that is part of a piperidine ring. The piperidine rings are arranged in a macrocyclic fashion, with their nitrogen atoms connected by the propyl chains, forming a large ring structure.

Figure 14

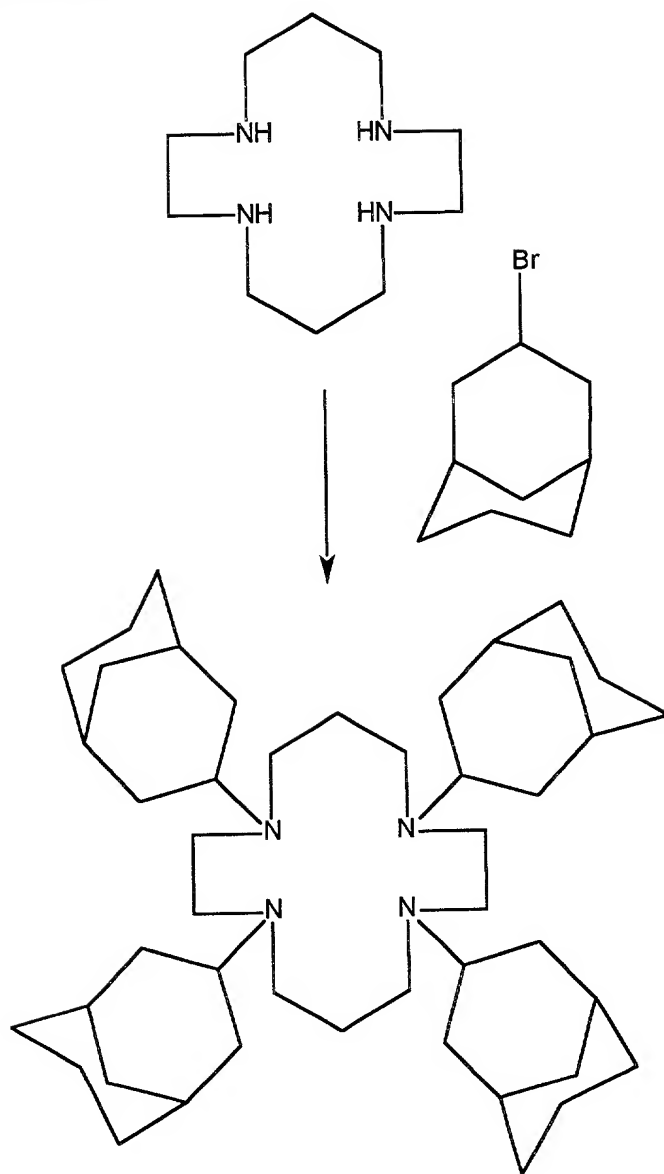


Figure 15

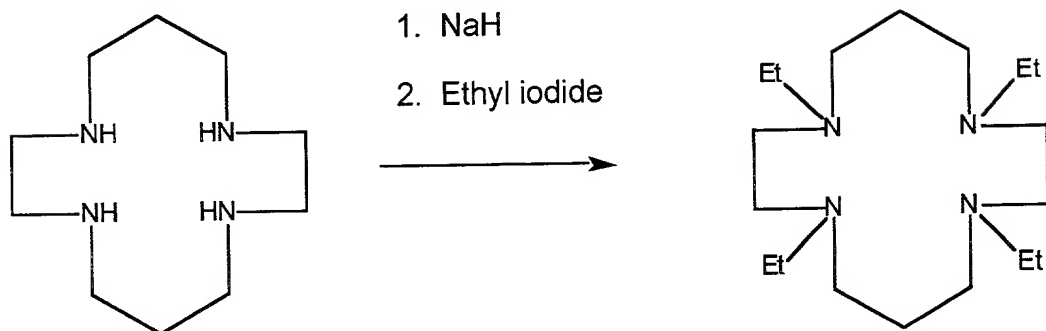


Figure 16

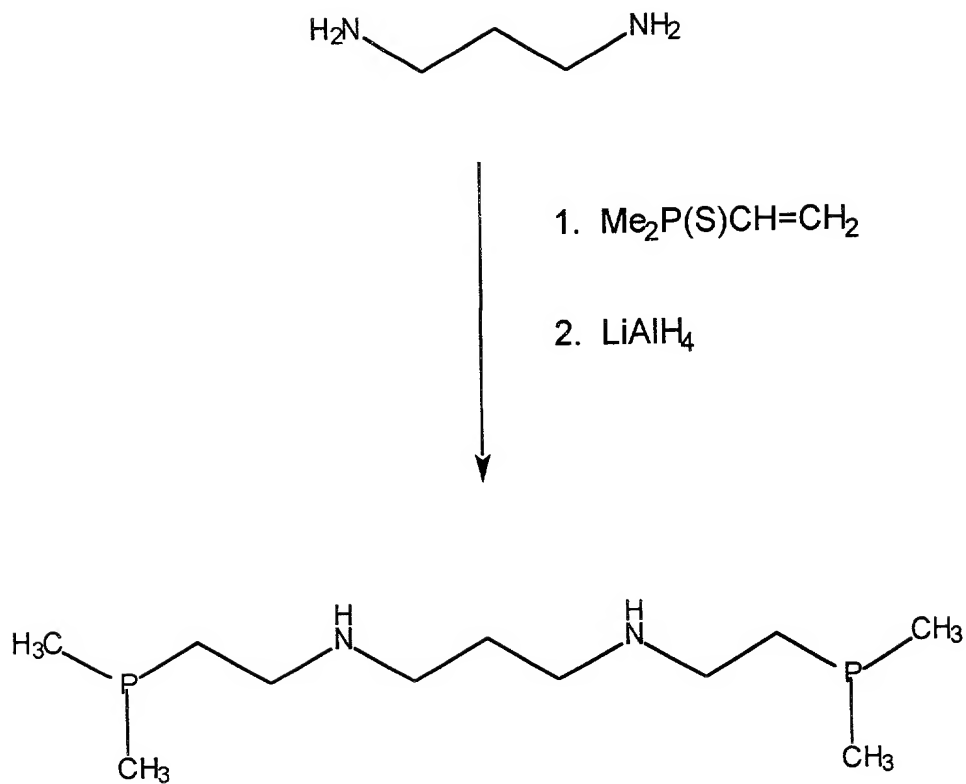


Figure 17

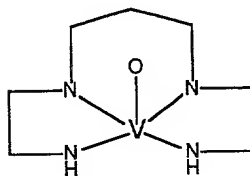
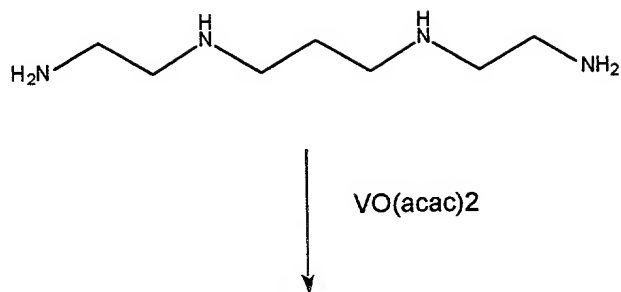


Figure 18

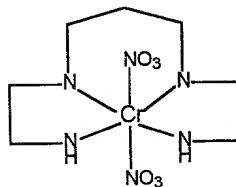
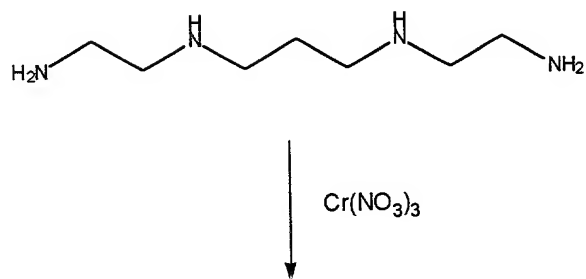
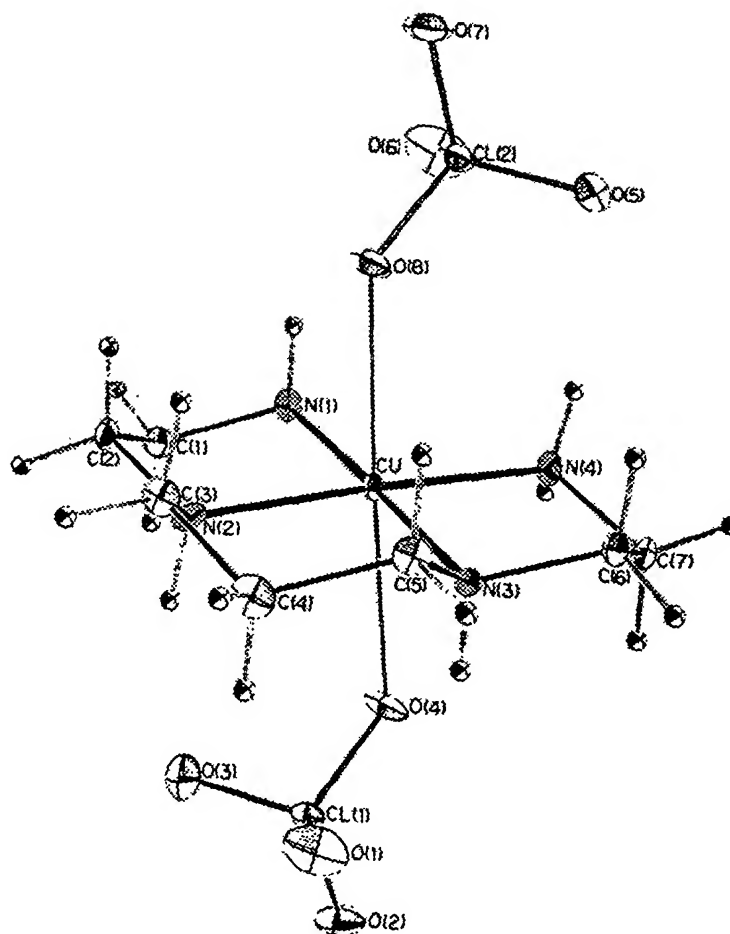


Figure 19 2,3,2 Tetramine 1,3-bis-[(2'-aminoethyl)-amino]propane



10047935 134801
T08T01 5527001